



DCRA Green Compliance

FUNDAMENTALS



DEPARTMENT OF CONSUMER AND REGULATORY AFFAIRS



DCRA

Department of Consumer and Regulatory Affairs

The mission of the Department of Consumer and Regulatory Affairs (DCRA) is to protect the health, safety, economic interests and quality of life of residents, businesses and visitors in the District of Columbia by ensuring code compliance and regulating business.

DCRA

Green Building Division

Regulations of green codes including:

- Green Building Act
- Green Construction Code
- Energy Conservation Code

Operates within the structure of DCRA's permitting and inspections groups, with work including reviews of construction documents, conducting building inspections, and collaborating with the community to further the efforts to build a more sustainable DC.

REGULATIONS

Green Building Act

Adopted in 2006

Applies to the design, construction, addition, alteration of buildings or structures:

- Publicly funded (10,000 sqft+)
- Privately funded (50,000 sqft+)

GREEN BUILDING ACT

Applicability

Publicly owned or financed project:

- New Construction
- Substantial Improvement
- 10,000 sqft and above

GREEN BUILDING ACT

Compliance Paths:

- Non-Residential: LEED Silver
 - Educational: LEED Gold
 - Residential: Green Communities
 - Mixed Use Space in Residential Project: LEED Certified
 - Tenant Fit Out: LEED Certified
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GREEN BUILDING ACT

Applicability

Privately owned or financed project:

- New Construction
- Substantial Improvement
- 50,000 sqft and above

GREEN BUILDING ACT

Compliance Paths:

- Non-Residential: LEED Certified
- Educational: LEED Gold
- Mixed Use Space in Residential Project: LEED Certified
- Residential: No requirements

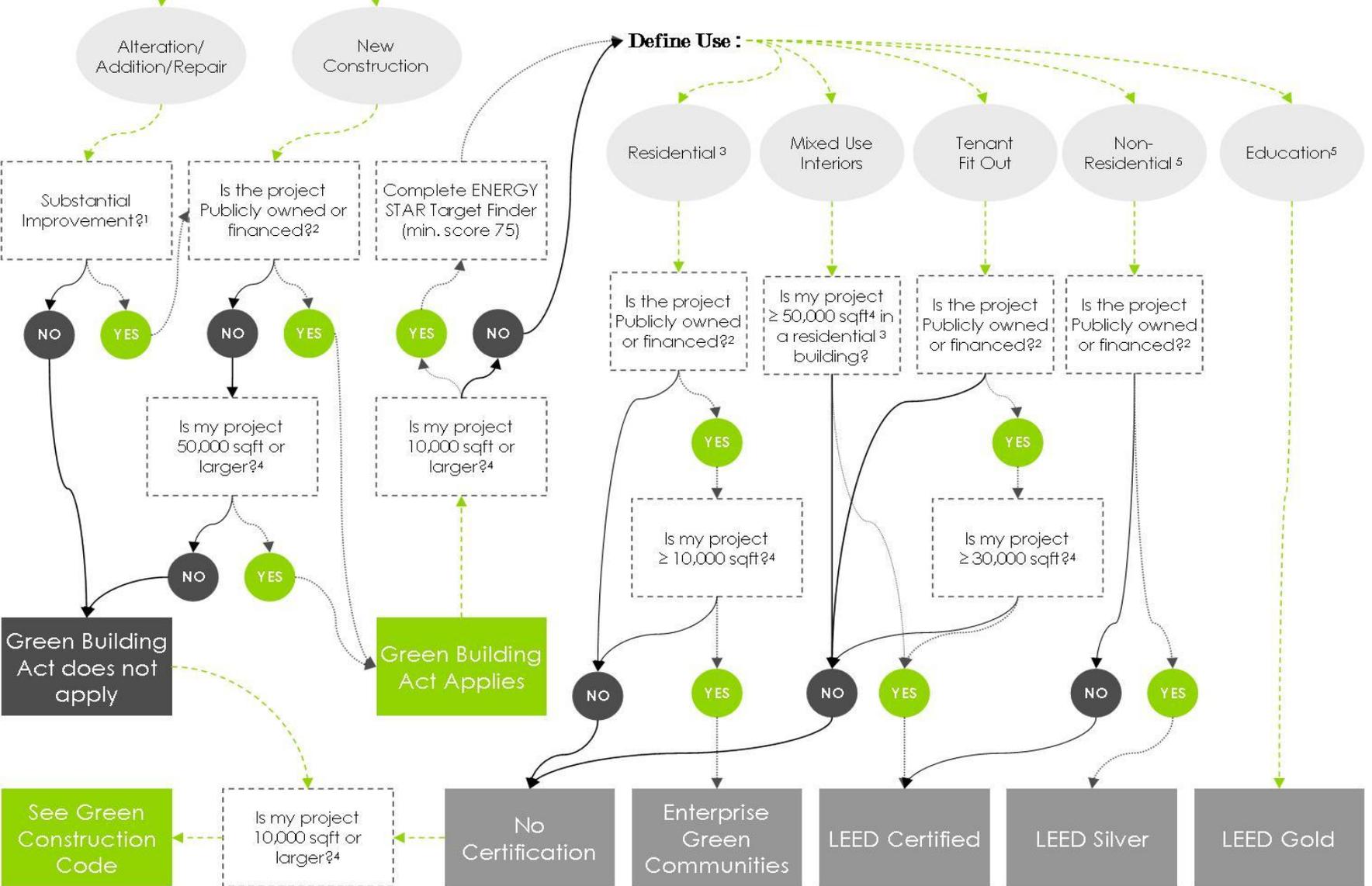
GREEN BUILDING ACT

LEED Standards

- New Construction & Major Renovations
 - Commercial Interiors
 - Core & Shell
 - Healthcare
 - Retail: Commercial Interiors
 - Retail: New Construction & Major Renovations
 - Schools
- 

My project is . . .

GREEN BUILDING ACT



1 12 DCMR K, 202
 2 12 DCMR K, 302.2
 3 12 DCMR K, 202
 4 Gross floor area as defined in 11 DCMR, 199
 5 12 DCMR K 302.3.4 applies to DCPS and DC public charter schools only, all other educational uses (universities, etc) shall comply with Non-Residential requirements

REGULATIONS

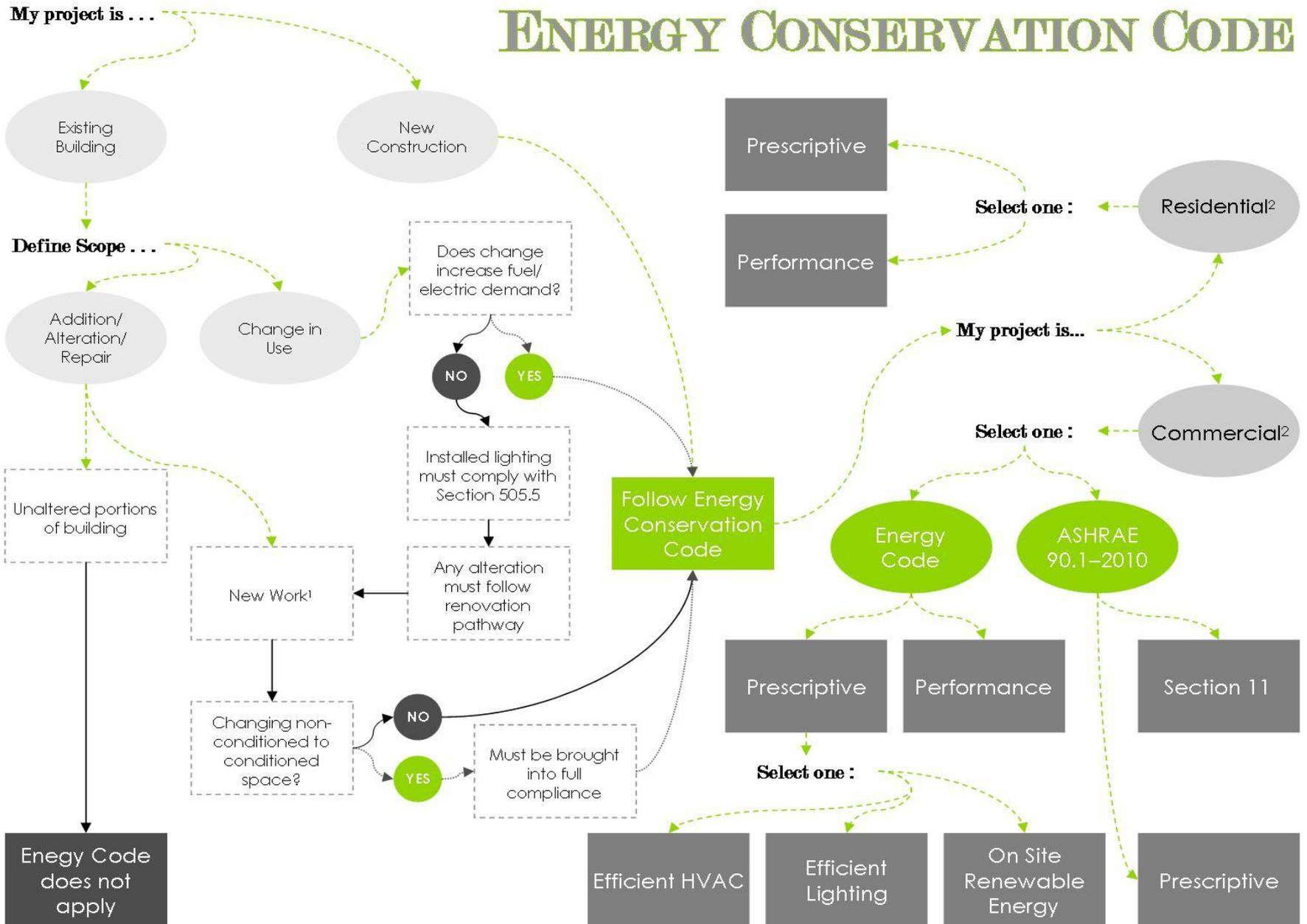
Energy Conservation Code

30% more energy efficient through increased requirements for air sealing, insulation levels, and building systems

Has two separate divisions

- Commercial
- Residential

ENERGY CONSERVATION CODE



¹ reference 12 DCMR A 101.4.7.5.3 Additions, Alterations, Renovations or Repairs.
² as defined by the Energy Conservation Code

BUILDING ENVELOPE

Intent

Set minimum levels of thermal performance for all components of the building envelope to reduce heat gains and losses across all climate zones.



BUILDING ENVELOPE

Key Requirements

- Insulation and Fenestration
- Roof Solar Reflectance
- Air Leakage

MECHANICAL SYSTEMS

Intent

Provide guidelines for effective energy performance of mechanical systems regardless of the type used (simple or complex) through right sizing and controls.

MECHANICAL SYSTEMS

Key Requirements

- Calculation of heating and cooling loads
 - Equipment and System Sizing
 - System Controls
 - Ventilation
- 

SERVICE WATER HEATING

Intent

Employ basic, cost-effective design practices to reduce energy used by minimizing both heat and water losses over the system.

SERVICE WATER HEATING

Key Requirements

- Performance Efficiency
 - Temperature Controls
 - Heat Traps
 - Pipe Insulation
 - System Controls
- 

ELECTRICAL POWER + LIGHTING

Intent

Reduce consumption and improve lighting conditions through efficient lighting products. Reduce heat added to spaces that must be removed by air conditioning.

ELECTRICAL POWER + LIGHTING

Key Requirements

- Lighting Controls
- Interior lighting power
- Exterior lighting
- Electrical Energy Consumption

EFFICIENCY PACKAGE

OPTION

Intent

Provide flexibility to achieve energy savings needed to meet the overall energy savings goals.

EFFICIENCY PACKAGE

OPTION

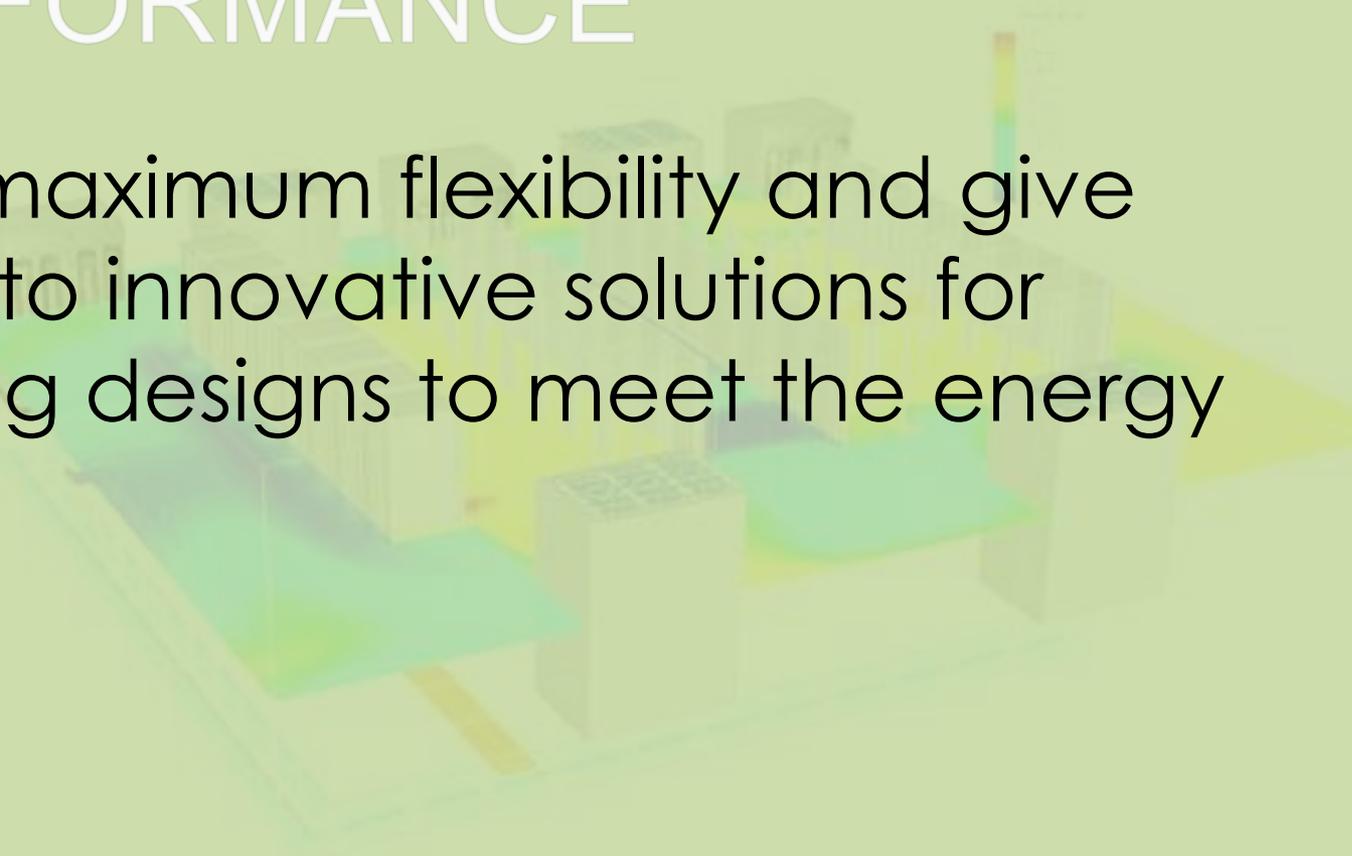
Key Requirements

- HVAC
- Lighting
- On site renewable energy

TOTAL BUILDING PERFORMANCE

Intent

Offer maximum flexibility and give credit to innovative solutions for building designs to meet the energy goals



TOTAL BUILDING PERFORMANCE

Key Requirements

- Mandatory:
 - Air leakage
 - Mechanical Systems
 - Water heating
 - Lighting
- Performance

SYSTEMS CX

Key Requirements

- Triggered through compliance with IgCC
 - New Construction
 - Level 3 Alterations
 - Level 1 and 2 Alterations over 50,000 sqft

REGULATIONS

Green Construction Code

Applies to the construction, addition, alteration, repair, razing, demolition of buildings/structures:

- Non-residential (10,000 sqft+)
- Multifamily residential 4 stories and larger (10,000 sqft+)
- Demolition/Raze (10,000 sqft+)
- Site Work (10,000 sqft+)

GREEN CONSTRUCTION CODE

My project is ...



Are you required to comply with the Green Building Act?



Follow Green Building Act

Is my project 10,000 sqft or larger??



Green Code does not apply

Is my project residential?



Follow the Green Code

Is my project Single Family or 3 stories or less?¹



No Required Electives



Is my project a Level 3 Alteration?

Select 13 Electives from Appendix A



Is my project New Construction?

Select 15 Electives from Appendix A

Green Code

I am going to follow ...

Alternate Compliance Path

Select one :

- ASHRAE 189.1
- Green Communities Certified
- LEED Certified
- ICC 700 Bronze + ENERGY STAR v.3 or MFHR

¹ 12 DCMR A, 101.4.9.3.2
² Gross floor area as defined in 11 DCMR, 199

SITE DEVELOPMENT

Intent

Address actions related to limiting the negative effects of building on a site, as well as protecting, restoring and enhancing the natural features of the building site and the surrounding environment.

SITE DEVELOPMENT

Key Requirements

- Native and Invasive species
 - Site Waste Management
 - Heat Island Mitigation
 - Site lighting
- 

SITE DEVELOPMENT

Appendix A

- Wildlife corridor
 - Infill site selection
 - Brownfield site selection
 - Site restoration
 - Mixed use development
 - Changing and Shower Facilities
 - Long Term bicycle parking and storage
 - Heat island (75-100% compliant)
 - Green Roof covering
 - Native planting (75-100% compliant)
 - Electric Vehicle Charging
- 

MATERIAL RESOURCES

Intent

Mitigate the impact of building materials through their lifecycle including extraction, manufacture and disposal through provisions related to material selection, recycling, reuse, renewability, toxicity, durability, and resistance to damage.

MATERIAL RESOURCES

Key Requirements

- Construction Material Management
 - Construction Waste Management
 - Material Selection (50,000 sqft +)
 - Lamps
 - Building Moisture Control
- 

MATERIAL RESOURCES

Appendix A

- Waste management (70% compliance)
 - Landfill maximum (4 lbs/sqft)
 - Material Selection (50-75% compliance)
 - Building service life plan
 - Design for deconstruction
 - Existing building reuse
 - Historic building reuse
- 

ENERGY CONSERVATION

Intent

Reduce the use of energy in buildings and on building sites through design, construction, commissioning and operation by including energy metering, selecting efficient equipment, including renewable systems and properly commissioning the project to achieve its energy goals.

ENERGY CONSERVATION

Key Requirements

- Prescriptive Performance Pathway
 - Modeled Performance Pathway
 - Energy Metering, Monitoring and Reporting
 - Automated Demand Response Infrastructure
 - Appliances and Equipment
 - Energy Systems Commissioning and Completion
- 

ENERGY CONSERVATION

Key Requirements

- Energy Metering, Monitoring and Reporting
 - All New Construction
 - Complete Electrical System Replacement
 - Except Group R Occupancies

ENERGY CONSERVATION

Key Requirements

- Automated Demand Response

Infrastructure

- All New Construction
 - Complete Electrical System Replacement
 - Except Group R Occupancies
- 

ENERGY CONSERVATION

Key Requirements

- Energy Systems Commissioning
 - All New Construction
 - All Level 3 Alterations
 - Level 1 and 2 Alterations over 50,000 sqft

ENERGY CONSERVATION

Appendix A

- zEPI reduction
 - Mechanical systems increased efficiency
 - Service water heating increased efficiency
 - Lighting system increased efficiency
 - Passive design
 - Renewable energy systems
 - Green power purchasing
 - Energy display
 - Permanent Shading devices
- 

WATER CONSERVATION

Intent

Protect the potable water supply as a raw material that is viewed as a precious commodity by reducing the amount of water used in buildings, and providing paths to reclaim and reuse water in a safe and effective way.

WATER CONSERVATION

Key Requirements

- Fixtures, Fitting, Equipment and Appliances
 - HVAC Systems and Equipment
 - Water Treatment Devices and Equipment
 - Metering
- 

WATER CONSERVATION

Appendix A

- Onsite waste water treatment
- Nonpotable water for outdoor hose connections
- Nonpotable water for plumbing fixture flushing
- Nonpotable water for industrial process make up
- Nonpotable water for cooling tower make up
- Grey water collection

INDOOR ENVIRONMENTAL QUALITY

Intent

Focus on the essential elements of what makes an indoor space occupiable by providing good indoor air quality, thermal comfort, noise control, and natural lighting. These items of a building focus on human comfort, productivity and overall satisfaction of users.

INDOOR ENVIRONMENTAL QUALITY

Key Requirements

- Building Construction Features, Operations, and Maintenance
- HVAC Systems
- Prohibited Materials
- Material Emissions and Pollutant Control

INDOOR ENVIRONMENTAL QUALITY

Appendix A

- No VOC Flooring materials
- No VOC ceiling materials
- No VOC wall materials
- Total VOC limit
- Views to the exterior (50-75% compliance)
- Daylighting
- Post Construction IAQ testing
- Post Construction flush out

COMMISSIONING

Intent

Commissioning of a project is used to assist and encourage building owners and facility managers to operate and maintain buildings at a performance level that was originally intended by design professionals. Requirement for commissioning provide independent verification that all systems of a project are installed and operating correctly.

COMMISSIONING

Key Requirements

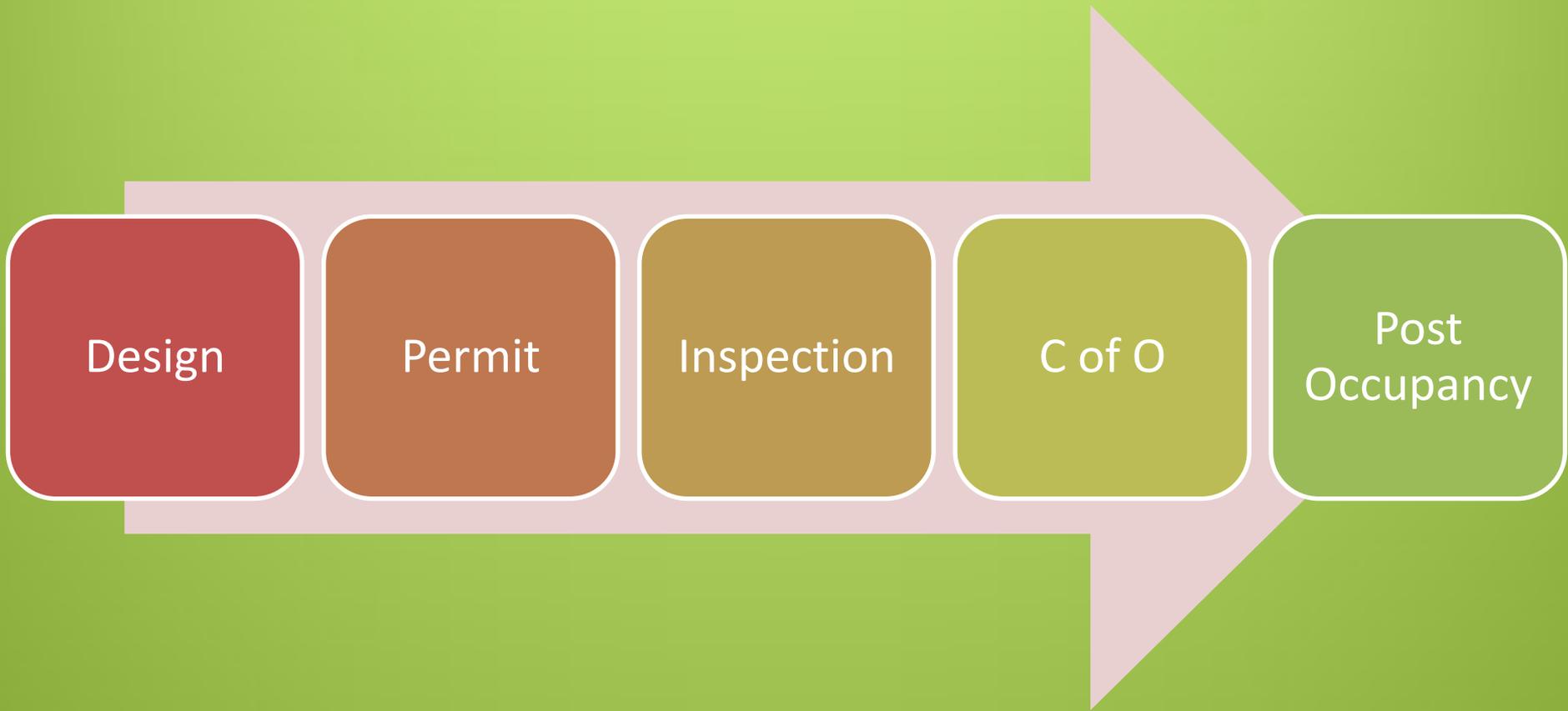
- Completed by a registered design professional or other approved agencies
- Preliminary report due before final inspection
- Final report due within 180 days of CoO issuance

COMMISSIONING

Key Requirements

- Required for projects with new equipment and systems or total replacements
 - All New Construction
 - All Level 3 Alterations
 - Level 1 and 2 Alterations over 50,000 sqft

TIMELINE



Design

Permit

Inspection

C of O

Post
Occupancy

DESIGN PHASE

Determine Applicability

- Determine all compliance paths
 - GBA – LEED or Green Communities
 - GCC – GCC (and Energy prescriptive or performance), LEED, 189.1, EGC, NGBS
 - ECC – ECC (prescriptive or performance), 90.1 (prescriptive or performance)
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DESIGN PHASE

Preliminary Design Review Meetings

- Meeting to review plans for code compliance prior to permit submission
- Fee for projects
- Scheduled months in advance
- 90 minutes
- PDRM Coordinator: Ms. Toni Taylor,
toni.taylor@dc.gov

DESIGN PHASE

Green Review Meetings

- Meeting to review plans for green compliance prior to permit submission
- Free to projects, 60 minutes with plans
- Contact green.building@dc.gov

PERMITTING

Process

- Permit Application Online
 - Intake @ 1100 4th St SW
 - ProjectDox
 - Review/Comment/Revise
 - Issuance
- 

PERMITTING

Submittal Documents

- Green Building Act
- Energy Code
- Green Code

PERMITTING

Green Building Act

- Share online account with green.building@dc.gov
 - Complete registration and checklist tracking correct number of points (LEED)
 - Complete Prebuild Certification (Enterprise)
 - Energy Star Target Finder
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PERMITTING

Energy Code

- Energy Verification Sheet
- Energy Model Inputs/ Outputs
- Load Calculations
- Supplemental Documentation
- Code compliance reflected in drawings

PERMITTING

Green Construction Code

- IgCC Energy Path
- Commissioning Plan
- Project Elective Checklist
- Credit-Specific Documentation
- Code compliance reflected in drawings

INSPECTIONS

Process

- Footing/Foundation/Slab
 - Framing
 - MEP Rough-in
 - Insulation
 - MEP Final
 - Building Final
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INSPECTIONS

Process – Third Party

- Pre-Construction
- Rough-In
- Building Final

CERTIFICATE OF OCCUPANCY

Documentation

- GBA
 - financial security (private)
 - GCC
 - Completed Site Waste Management Form
 - Completed Construction Waste Management Form
 - Commissioning Acknowledgement
 - Preliminary Commissioning Report (if requested)
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POST OCCUPANCY

Documentation

- GBA/GCC Alternate Compliance Path
 - Certification (2 yrs/180 days)
- GCC (180 days)
 - Material Selection Form
 - Final Commissioning Report
 - Additional documentation for Project Electives

QUESTIONS?

green.building@dc.gov

<http://dcra.dc.gov/page/green-building-program>

<http://buildgreenDC.org>